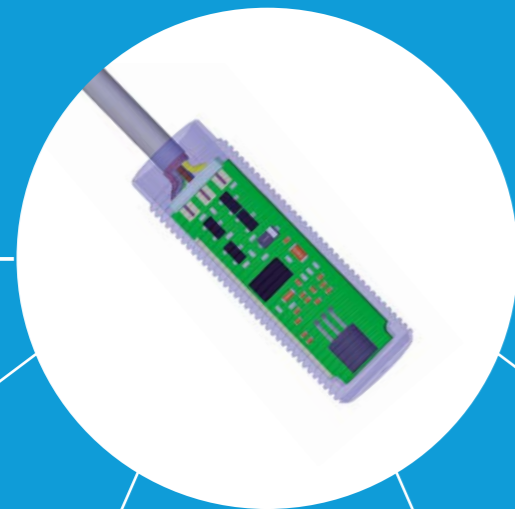


iM

Smart Sensor



DIGITAL SOLUTIONS

Easy interface with hmi pc or fieldbus of the machine where it is installed on



PREVENTIVE MAINTENANCE

Machine downtimes can be prevented by monitoring the spindle's operation over the time



SAFETY

The sensor immediately communicates if the operating conditions are too demanding or dangerous



MONITORING

Displays the electrospindle machining conditions continuously and in real time



PRECISION

The sensor's exclusive technology detects the vibrations produced by the electrospindle and ignores those caused by the rest of the machine

ITM UNITEC
ENGINEERED BEARINGS

A company of the Mondial Group

iM

Smart Sensor



ITM UNITEC GmbH
Kuchengrund 19
71522 Backnang

Tel. +49 7191 495 265-0
Fax +49 7191 495 265 10
info@itm-unitec.com
www.itm-unitec.com

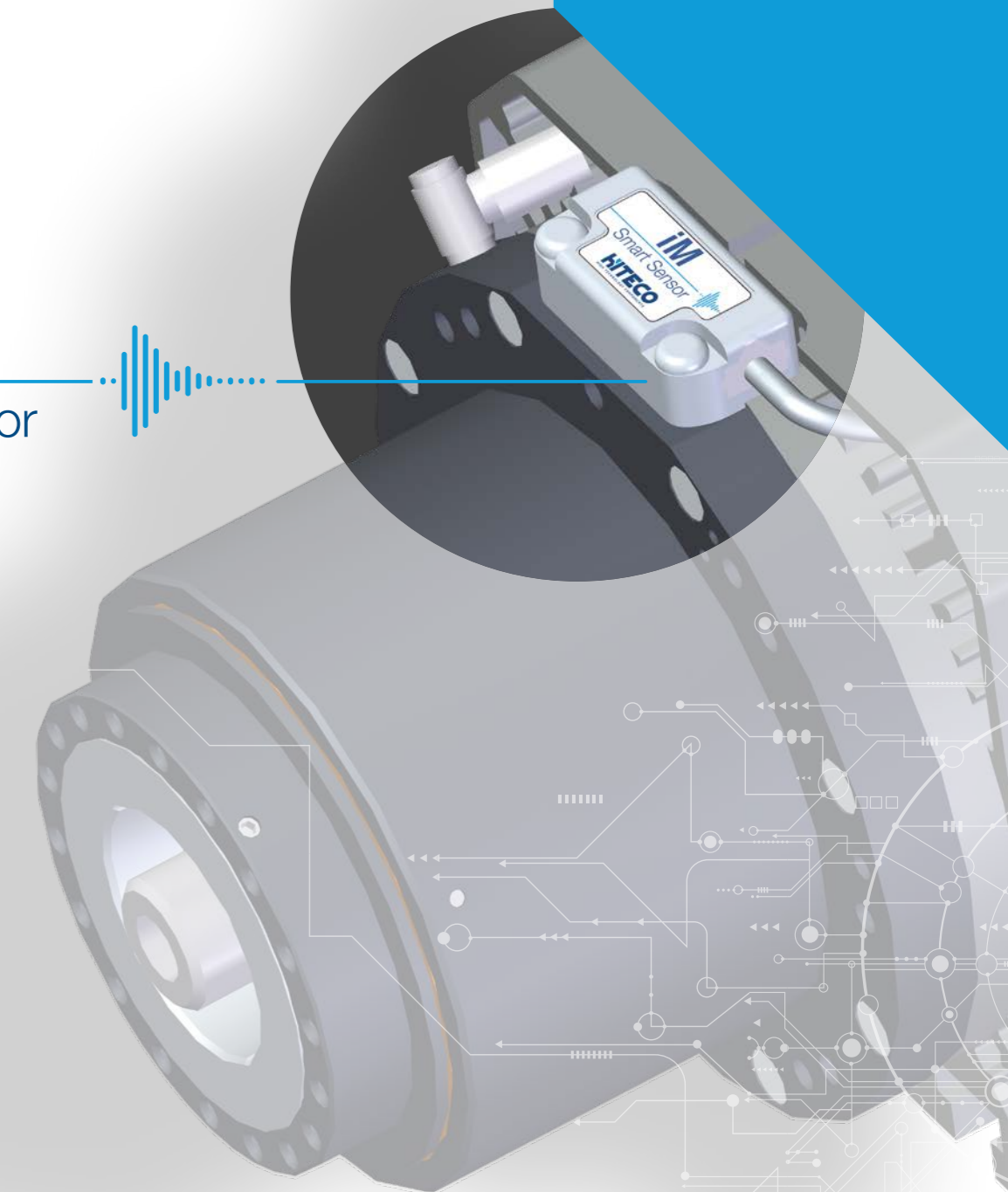


AN INNOVATIVE SENSOR DESIGNED TO
MONITOR THE SPINDLE IN REAL TIME

SPINDLE
VIBRATION
SENSOR

iM

Smart Sensor



HITECO
HIGH TECHNOLOGY COMPONENTS

Maximize the **productivity** of your machine and increase the **life** of your electrospindle with **iM Smart Sensor**



The **iM Smart Sensor** is an intelligent sensor that constantly monitors the machining conditions of the spindle it is installed on. It can support the whole production process, monitoring the main quantities that the spindle works on: **vibration** and **temperature**. This process monitoring instrument lets users easily identify malfunctions and consequently reduce unexpected machine down times



Bearings temperature monitoring



Speed monitoring



Vibration sensor

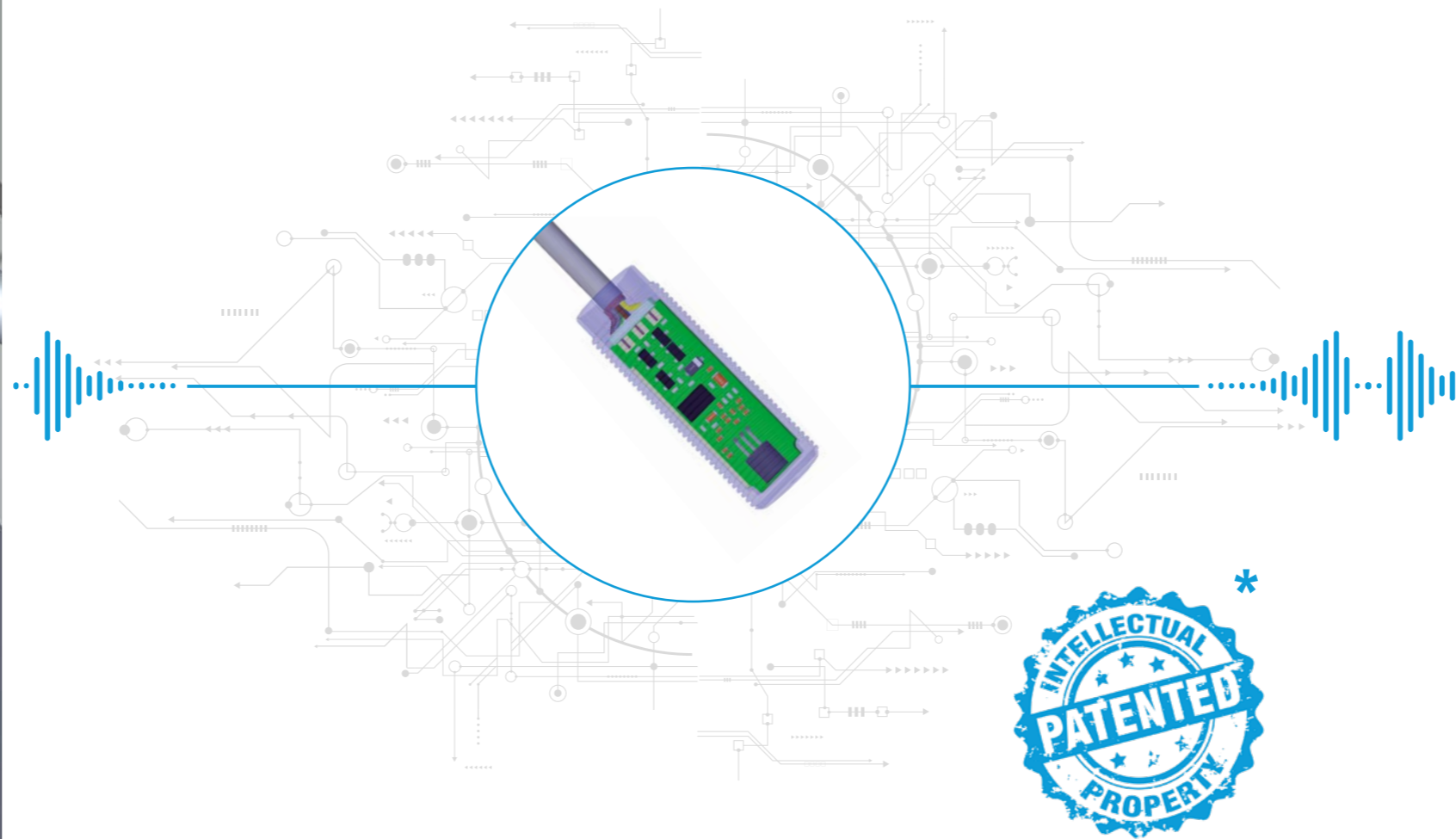
Maximising machine productivity

Programming targeted maintenance interventions

Increase the electrospindle's life

Increase the machine's safety levels

AN INTELLIGENT SENSOR FOR A MACHINE THAT WORKS IN COMPLETE SAFETY



TECHNICAL SPECIFICATIONS

Accelerometer	triaxial with three right-angle axes X, Y and Z
Type of sensor	MEMS
Field of measurement	$\pm 16 \text{ g}$ ($\pm 156 \text{ m/sec}^2$)
Bandwidth	1000 Hz
Resolution	0,125 g/sample
Operating temperature	from 5 to 85°C
Impact resistance	3000 g (29400 m/sec^2)
Connectivity	Modbus on RS485

* ITALIAN PATENT MO2006A000421

An **intelligent sensor** for a machine that works in **complete safety**

- **On-board triaxial accelerometer:** the sensor measures the vibrations in all directions
- **Filtering of measured vibrations:** the sensor detects only the electrospindle vibrations, filtering out those produced by the rest of the machine. Prevention of false alarms
- **Hardware alarm:** the sensor features an on/off electrical contact to communicate whether the vibration level measured is dangerous
- **Communication via modbus on RS485:** fast and universal, it ensures direct and easy communication with other fieldbus (e.g. ethercat, io-link)
- **Available for Powertech electrospindles (3-axis machines) and for Robotech electrospindles (5-axis machines)**

iM Smart Sensor HMI interface. Your spindle's life in just a few clicks

The simple and intuitive **iM Smart Sensor HMI interface** lets you **monitor** in **real time** the **machining conditions** of the electrospindle on a graph and check whether the operation is optimal or not.

The platform lets users collect, process and export a wide range of data autonomously, with the following instruments:

- **Spindle actual values:** it is used to monitor, through an intuitive graph and coloured histograms, the vibration level, the rotation speed and the temperature of the electrospindle bearings
- **Spindle state:** state indicator that checks whether the machining conditions of the electrospindle are optimal or not

Status: OK

Status: NOT OK

- **Real time values:** graph that displays the vibration level, acceleration and bearings' temperature values over time

SPINDLE VIBRATION SENSOR